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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,584	03/14/2005	Thorsten Mayer	R.303672	7597

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EXAMINER
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NGUYEN, TU MINH

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No. 10/527,584	Applicant(s) MAYER ET AL.	
	Examiner Tu M. Nguyen	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) 21,22 and 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-20,23-32 and 34-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>031405</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election of the invention of the species of Figure 3 in an Applicant's Response to an Election/Restriction Requirement filed on November 23, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 17-20, 23-32, and 34-36 are readable thereon and will be examined in their full merit. Claims 21, 22, and 33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### *Claim Objections*

2. Claims 17, 19, 20, 31, 32, and 34 are objected to because of the following informalities:

- Claim 17, on line 2 of the claim, --at least one of-- should be inserted preceding “self ignition”; and “and/or” should read --and--.

- Claims 19 and 20, on line 1 of each claim, “by” should be deleted.

- Claim 31, on line 1 of the claim, --at least one of-- should be inserted preceding “self”; and on line 2 of the claim, “and/or” should read --and--.

- Claim 32, on line 1 of the claim, --at least one of-- should be inserted preceding “a delivery”; and on line 2 of the claim, “and/or” should read --and--.

- Claim 34, on line 1 of the claim, --is-- should be inserted preceding “eccentrically”.

Appropriate correction is required.

*Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 17, 19, 25, 28-31, 35, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Oshima et al. (U.S. Patent 5,412,946).

Re claims 17 and 31, as shown in Figure 6, Oshima et al. disclose an exhaust-gas cleaning system and a method for cleaning the exhaust gas of an internal combustion engine (112) with at least one of self ignition and with direct fuel injection (line 13 of column 1), the system comprising:

- at least one oxidizing catalytic converter (11) (as indicated on lines 12-65 of column 4, the hydrogen generator (11) is a catalyst having an oxidizing function), disposed in an exhaust conduit of the engine,

- at least one device (12), disposed downstream of the oxidizing catalytic converter (11) for the selective catalytic reduction of the exhaust gases, and

- a delivery device (116), integrated (in the pending application, the integration of a delivery device (6) with an oxidizing catalyst (4) appears to be for heating to vaporize a reducing

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agent only) with the at least one oxidizing catalytic converter (11), for delivering a reducing agent (hydrogen) into the exhaust-gas stream of the engine (112).

Re claim 19, the system of Oshima et al. further comprises a mixing device (10) downstream of the delivery device (116), for distributing the reducing agent in the exhaust-gas stream.

Re claim 25, in the system of Oshima et al., the at least one oxidizing catalytic converter (11) with the delivery device (116) integrated with it, comprises a first housing (see Figure 7); and wherein the device for selective catalytic reduction (12) comprises a second housing adjoining the first.

Re claims 28 and 35, in the system and method of Oshima et al., the exhaust-gas stream is carried through at least one further oxidizing catalytic converter (9) upstream of the first oxidizing catalytic converter (11).

Re claim 29, in the system of Oshima et al., the at least one further oxidizing catalytic converter (9) is disposed in the immediate vicinity of the combustion chambers of the engine (112).

Re claims 30 and 36, in the system and method of Oshima et al., the exhaust-gas stream is carried through at least one further oxidizing catalytic converter (9) each in each exhaust conduit (113) immediately downstream of the combustion chambers of the engine (112).

5. Claims 17, 18, 23, 25, 26, 31, 32, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Schaller et al. (U.S. Patent Application 2005/0247048).

Re claims 17 and 31, as shown in Figure 1, Schaller et al. disclose an exhaust-gas cleaning system and a method for cleaning the exhaust gas of an internal combustion engine with

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at least one of self ignition and with direct fuel injection (see paragraph 0003), the system comprising:

- at least one oxidizing catalytic converter (64), disposed in an exhaust conduit (61) of the engine,
- at least one device (65), disposed downstream of the oxidizing catalytic converter (64) for the selective catalytic reduction of the exhaust gases, and
- a delivery device (50), integrated with the at least one oxidizing catalytic converter (64), for delivering a reducing agent into the exhaust-gas stream of the engine.

Re claims 18 and 32, in the system and method of Schaller et al., the delivery device (50) comprises a nozzle (52) for atomizing the reducing agent.

Re claim 23, in the system of Schaller et al., the outlet of the nozzle (52) is disposed in an outer peripheral region of the oxidizing catalytic converter (64).

Re claim 25, in the system of Schaller et al., the at least one oxidizing catalytic converter (64) with the delivery device (50) integrated with it, comprises a first housing (see Figure 1); and wherein the device for selective catalytic reduction (65) comprises a second housing adjoining the first.

Re claim 26, in the system of Schaller et al., the at least one oxidizing catalytic converter (64) and the device for selective catalytic reduction (65) has a common housing.

Re claim 34, in the method of Schaller et al., the reducing agent is eccentrically inside the oxidizing catalytic converter (64).

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 19, 24, 27, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaller et al. as applied to claims 17 and 18, respectively, above, in view of Oshima et al.

Re claims 19 and 20, the system of Schaller et al. discloses the invention as cited above, however, fails to disclose that the system further comprises a mixing device downstream of the delivery device, for distributing the reducing agent in the exhaust-gas stream.

As illustrated in Figure 6, Oshima et al. teach that it is conventional in the art to utilize a mixing device (10) downstream of a delivery device for distributing the reducing agent in the exhaust-gas stream. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Oshima et al. in the system of Schaller et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to provide a thoroughly mixture of reducing agent and exhaust gas into a selective catalytic reduction device.

Re claim 24, in the modified system of Schaller et al., the outlet of the nozzle (52) is disposed in an outer peripheral region of the oxidizing catalytic converter (64).

Re claim 27, in the modified system of Schaller et al., the at least one oxidizing catalytic converter (64) and the device for selective catalytic reduction (65) have a common housing.

*Prior Art*

8. The IDS (PTO-1449) filed on March 14, 2005 has been considered. An initialized copy is attached hereto.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of six patents: Lane et al. (U.S. Patent 5,611,198), Schmelz (U.S. Patent 5,628,186), Zurbig et al. (U.S. Patent 6,173,568), Wu et al. (U.S. Patent 6,293,097), Mathes et al. (U.S. Patent 6,401,455), and Liu et al. (U.S. Patent 6,449,947) further disclose a state of the art.

*Communication*

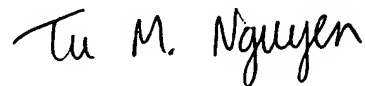
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMN

Tu M. Nguyen

December 12, 2005

Primary Examiner

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